

Their correspondence with the milk series is shown in an interesting way by the close resemblance which the last milk premolar often bears to the first molar. These two extremes of dentition, *i.e.* purely monophyodont and, excepting for the molars, purely diphyodont, are however connected by an intermediate state of affairs, which is represented by more than one stage. In *JBorhyaena* (probably a Sparassodont) the incisors and the canines and two out of the four premolars belong to the permanent dentition, while the two remaining premolars and of course the three molars are of the milk series. *Profhylcacinus*, a genus belonging to the same group, has a dentition which is a step or two further advanced in the direction of the recent Marsupials. "We find, according to Ameghino,¹ whose conclusions are accepted by Mr. Lydekker, that the incisors, canines, and two premolars belong to the milk series, while the permanent series is represented only by the two remaining premolars. "We can tabulate this series as follows:—

- (1) Purely monophyodont, with teeth only of the first set-----
Toothed "Whales.
- (2) Incompletely monophyodont, as in the Marsupials, where there is a milk dentition with only one tooth replaced.²
- (3) Incompletely diphyodont, with the dentition made up partly of milk, partly of permanent teeth, as in *Itorhyaena*.
- (4) IKphyodont, where all the teeth except the molars are of the second set; this characterises nearly all the mammals.

As we pass from older forms to their more recent representatives there is as a rule a progressive development of the form of the teeth. This is especially marked among the Ungulata, The extremely complicated type of tooth found in such a form as the existing Horse can be traced back through a series of stages to a tooth in which the crown is marked by a few separated tubercles or cusps. Arrived at this point, the differences between the teeth of ancestral Horses and ancestral Rhinoceroses and Tapirs are hard to distinguish with accuracy; and the same difficulty is experienced in attempting to give a definition of other large orders by

the characters of the teeth, such as will apply to the Eocene or

¹ *Proc. Zool. Soc.* 1899, p. 922.

² Mr. M. Woodward, however (*P.Z.S.* 1893, p. 467), is disposed to think that **in** some Macropodidae at any rate the supposed tooth of the second set really belongs to the milk dentition, arising late between Pra_3 and Pm_4 .